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Salvisberg, A ; Sacchi, S

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Alexander Salvisberg & Stefan Sacchi
(Swiss Job Market Monitor, University of Zurich)

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Alexander Salvisberg
University of Zurich, Institute of Sociology
Andreasstrasse 15
CH-8050 Zurich

salvisberg@soziologie.uzh.ch
(+41) (0)44 635 23 37

Alexander Salvisberg is senior researcher at the 'Swiss Job Market Monitor' (Institute of Sociology, University of Zurich). His main research interests are in qualifications, job requirements and skill demand, long-term economic change, its driving forces and social implications, as well as current trends in the labour market.

Stefan Sacchi
University of Zurich, Institute of Sociology
Andreasstrasse 15
CH-8050 Zurich

sacchi@soziologie.uzh.ch
(+41) (0)44 635 23 52

Stefan Sacchi is senior researcher at the Swiss Youth Panel 'Transitions from Education to Employment' (TREE, University of Basel) and at the 'Swiss Job Market Monitor' (University of Zurich). His current research interests focus on the impact of institutional arrangements and labour market structures on educational and career mobility and social inequality.

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Abstract

This study seeks to find the reasons for the rising risk of unemployment for people who have completed basic vocational education and training (VET) in Switzerland. We focus on the long-term structural shift on the demand side of the labour market and its consequences for new entrants' chances of employment in the labour force. A detailed analysis of the development of vacancies for such 'career entrants' in the time period 2001 to 2011 suggests that neither a growing occupational mismatch nor a general shift in the level of education to the disadvantage of workers with vocational education can be made responsible for the rising unemployment of labour market entrants. Instead, the available evidence indicates that a diminishing part of the vacancies suited for VET graduates remains open to entrants because of the increasing job requirements with regard to work experience and further education. Basic vocational education and training alone is increasingly less a guarantee for a smooth entry into the working world.

Keywords

Youth labour market; school-to-work transitions; job requirements; vocational training; skill demand; Switzerland

Introduction

The transition from education to work is a *critical step* to be taken, often accompanied by unemployment and other employment problems. Compared to other European countries, the Swiss dual system of *vocational education and training* (VET) has facilitated a comparatively smooth transition to work for the vast majority of youths completing vocational training. Our research nevertheless confirms that, net of the effects of business cycles, labour market entry has become more difficult in the long term even for Swiss VET graduates. Since 2001, the risk of unemployment among career entrants with VET have increased not only in absolute numbers but also compared to older skilled workers and university graduates.[1] In the following, we will consider a number of possible explanations for their growing difficulties in entering the labour market. Our inquiry is not directed at the short-term effects of business cycles but will ask how long-term structural changes in the economy affect the employment opportunities of career entrants who have completed basic vocational education and training.

The article is organized in the following manner: The first section presents *theoretical considerations* concerning the problems of gaining initial access to the labour market. These considerations revolve around the impact of structural economic change on the *availability of jobs for new labour market entrants*. In the second section, we introduce the data sources used in our study. The subsequent sections are devoted to presenting the results of our empirical analyses. First, we present our findings for the development of unemployment among new entrants to the workforce (3). We then offer explanations for the observed long-term increase in the risk of unemployment (4) while we assess the relevance of our arguments empirically step by step. In the final section, we assemble the individual findings into a more complete picture and draw some conclusions.

1. Theoretical Considerations

Research on the transition from the education system to the labour market has intensified in recent years due to persistently high and, in the wake of economic crisis, disproportionately increasing youth unemployment, the often unstable career pathways of young VET graduates, and the negative impact of failed career entry on employment pathways later on (Scarpetta et al. 2010, ILO 2012, Dietrich 2012). The difficulties of career entry have inspired a number of comparative international studies accordingly (Müller and Gangl 2003, Breen 2005, Brzinsky-Fay 2007, Wolbers 2007, Blossfeld et al. 2008).[2] The focus of these studies is on international variations in the institutional arrangements relevant to a successful transition to the workforce as well as the individual and socio-structural prerequisites for such success. Compared to

[1] When we speak of 'career entrants' in the following, we are referring to graduates of dual or school-based upper secondary vocational training who are looking for regular employment upon completing VET.

[2] Switzerland has not been considered in any of these studies.

the institutional features of educational systems, labour market environments have drawn much less research attention (in this respect, see Gangl et al. 2003: 302f). This is especially true with regard to the implications of changes in the structure of labour demand and companies' skills requirements for successful career entry. Against this backdrop, our contribution moves the changing labour market conditions to the centre of attention.

In principle, the situation of career entrants is marked by a particularly vulnerable labour market status (Gangl 2003). The risk of unemployment is not only generally higher for youths compared to adults but also responds more strongly to economic fluctuations (OECD 2008). VET graduates newly entering the labour market are mostly at an additional disadvantage compared to the proven and experienced employees when new staff is hired. This involves a higher risk of being the first to lose their jobs in the event of economic crisis ('last-in-first-out'; see Lindbeck and Snower 2002: 4). In addition, labour market entrants have a disadvantage irrespective of the particular economic situation compared to experienced workers in terms of 'signals' that positively distinguish them in the eyes of potential employers (Bills 2003). Since hiring inevitably involves uncertainty concerning the capability, motivation, and suitability of job candidates, employers generally prefer candidates with the most impressive collection of such 'signals.'

At the centre of our attention, however, are explanations for the long-term deterioration in the employment prospects of VET graduates entering the workforce compared to experienced workers. From a theoretical viewpoint, changes on both the supply and demand side of the labour market could play a role here. The fact that new labour market entrants immediately compete with a far greater number of skilled workers older than they are speaks against any major influence from the supply side. In the literature, we find inconclusive evidence for whether or not there is a positive correlation between youth cohort size and youth unemployment (Gangl 2003: 271 finds no such relation, for an overview, see Korenman and Neumark 2000). Our own analysis (Sacchi and Salvisberg 2011: 25ff) shows that the size and composition of the cohorts to complete VET in Switzerland have hardly changed over time. Moreover, it shows that since the mid-1990s neither a cyclical nor a long-term trend can be discerned in the rate of former apprentices that remain employed with the company that trained them. This suggests that the increasing risk of unemployment for career entrants with VET can neither be explained by changes in labour supply nor by a declining rate of post-training employment by companies that provide VET. Generally speaking, this particular risk of unemployment, at least in the short to medium term, mainly depends on the personnel needs of companies – that is, on labour demand (O'Higgins 1997, Bell and Blanchflower 2010).

Against this background, the following discussion will focus on the demand side of the labour market. We start from the basic assumption that in the long term, structural change of the economy can have a considerable impact on the jobs available to

new entrants to the workforce. We consider five possible concomitants of structural changes in the Swiss economy that offer plausible and potentially complementary explanations for growing structural unemployment among new labour market entrants with VET in Switzerland:[3] (1.1) An increasing occupational mismatch due to the persistently strong industry and crafts orientation of the Swiss VET system, (1.2) the increasingly higher *levels* of formal training required by companies, (1.3) the prolongation of initial on-the-job training required for new staff in the face of cutbacks in available training personnel, (1.4) an increasing demand for specific 'soft skills' that typically can only be acquired on the job, and (1.5) a shrinking supply of entry-level jobs suited for VET graduates in the wake of structural economic change.

1.1 Growing occupational mismatch

In Switzerland, like in other economically advanced countries, economic and technological change is leading to a long-term change in the demand for skilled labour. The manufacturing sector has lost significance while we observe divergent trends in the service sector: The demand for skilled labour in traditional service occupations have remained largely unchanged whereas it has increased substantially in knowledge-intensive fields, such as financial services, education, health, or research and development (Salvisberg 2010: 77ff). Because of the high occupational specificity of most VET diplomas and the corresponding segmentation of the Swiss labour market, there is a danger of a growing occupational mismatch between the qualifications acquired and those demanded in the labour market (Pollmann-Schult and Mayer 2010). The dual VET system traditionally has much stronger roots in the industrial sector than in occupations of the service sector, which have been expanding for a long time now (Schellenbauer et al. 2010).

1.2 Increasing demand for higher education

Structural economic change proves to be a major driver of the long-term increase in the *levels* of education and training required by companies (Sacchi et al. 2005). Since 1950 already, we can observe a fairly steady shift in the qualifications required by companies in Switzerland toward tertiary certificates, mainly caused by the changing structure of the economy. The spread of computer technology at the workplace has accelerated this development notably since the 1980s ("skill-biased technological change," see Acemoglu 2002, for Switzerland, see Arvanitis 2005). The shift in labour demand toward tertiary education can lead to a situation where new labour market entrants with VET may experience increasing difficulty in finding employment.

1.3 Increasing training requirements and declining training capacity

The development of companies' skills requirements cannot be reduced to the simple formula of a changing occupational structure plus a rising demand for higher formal

[3] Another possible explanation, which we will not pursue further here and which is not supported by our findings so far (cf. Sacchi and Salvisberg, 2011), is the increasing risk of being dismissed at the beginning of one's career, as postulated by the 'last-in, first-out' hypothesis.

education. Rather, we must also reckon with longer periods of initial training for new staff and higher training costs in the wake of the growing significance of nonroutine tasks (Autor et al. 2003) and more complex occupational roles (Hage and Powers 1992). At the same time, the restructuring of company workforces to achieve greater flexibility (Kalleberg 2003) along with the introduction of new technologies is creating a situation where staff capacity is utilized to a higher degree, even to the point of overextending it (Green 2002). Less capacity is available accordingly for training new employees. Taken together, these developments suggest that today companies increasingly opt in favour of skilled workers with proven experience, who are assumed to require comparatively less initial training on the job. It remains to be answered to what extent the lower wages of career entrants offset the higher initial training costs.

1.4 Increasing demand for 'soft skills'

Along with technological change, we can observe 'skill-biased organizational change' (Piva et al. 2005). The introduction of new forms of work organization comes with a broader range of tasks and areas of responsibility for employees. To a growing degree, individual productivity depends on high levels of autonomy, problem-solving capacity, and personal commitment as well as advanced communication and coordination skills (Salvisberg 2010). Although the conditions for obtaining such skills are probably better in the dual VET system compared to a purely school-based system, there are a number of soft skills that can hardly be taught as part of a training program (van Zolingen 2002). Whatever the case may be, practical proof of such skills through work experience reduces uncertainty for the employer when screening job candidates – uncertainty that is particularly high when involving assets not formally certified, such as personal virtues, social competencies, and motivational strengths (Hohn and Windolf 1988).

1.5 Structural Economic Change

The lines of reasoning in 1.3 and 1.4 both come down to specific *processes within companies* resulting in firms employing fewer VET graduates without experience and additional qualifications. A simple alternative explanation for the observed phenomena is structural economic change; after all, the supply of jobs suited for career entrants traditionally varies considerably according to sector, occupation, and company size (Sacchi and Salvisberg 2011). If economic restructuring results in employment shifting to sectors providing fewer jobs of this kind, this will lead to lower overall demand for career entrants. In this case, the main factor responsible for this development would not be changing requirements on part of employers but the fact that structural change eliminates more entry-level jobs than it creates.

1.6 The institutional framework of VET in Switzerland

Approximately 60% of all youths in Switzerland enter some kind of basic vocational training program upon completing nine years of compulsory education (Schellenbauer et al. 2010). Apart from a smaller number of school-based VET programs,

dual VET programs have consistently made up the lion's share of around 83% of vocational training programs for quite some time now (ibid.: 32).[4] They take three to four years and combine in-company training on the job by an employing company and regular theoretical instruction at a vocational school. This constitutes the essence of the dual VET system (for details, see Stalder and Nägele 2011). The highly standardized and stratified Swiss VET system provides its graduates with officially certified, nationally recognized, and often highly specialized qualifications. In conjunction with a comparatively weakly regulated labour market, the high signalling value of practice-based vocational training appears to be a major factor contributing to a fairly successful transition to gainful employment and low youth unemployment by international standards, as is true in other countries with dual VET systems as well (Breen 2005). A good 40% of dual VET graduates remain employed with the company that trained them upon completing their training. The fact that companies display a great willingness to offer their trainees permanent employment is yet another important factor in the success of the Swiss VET system. Despite the regular steps taken to adapt the VET system to a changing economic environment, the reform efforts so far have remained *within* the confines of the given institutional framework (Stalder and Nägele 2011). In the context of our study, with its focus on developments in the 21st century, we will essentially take this framework as given accordingly.

2. Data Sources

Our study centres on youths who first enter the labour market after completing basic VET. We omit from consideration youths who have not completed any form of post-compulsory education or have acquired a tertiary-level degree. The following analyses rely on various data sources that we refer to only in summary fashion (for a detailed account of datasets and methods, see Sacchi and Salvisberg 2011):

The *job placement and labour market statistics information system* (AVAM) provides microdata on a monthly basis on the unemployed who are registered with the regional job placement centres (exhaustive sample). Our analyses of unemployment among VET graduates are based on these official statistics.

The *Swiss Federal Statistical Office's Statistics of Educational Certificates* provides annual data on the size and composition of cohorts completing basic VET.

The *Swiss Labour Market Survey* (SAKE) regularly surveys a sample of Swiss residents in the second quarter of each year. It includes new entrants to the labour market and other youths who have completed basic vocational training. We use the information given on unemployment and the individual labour market situation in the first few years after completing VET. SAKE additionally provides the population estimator necessary to calculate unemployment rates.

[4] A separate analysis of dual and school-based VET would be an interesting endeavor in this context but is not possible based on the data currently available.

The *Swiss Job Market Monitor* (SJMM) in March of each year collects a random sample of all jobs advertised in the press, on company websites, and online job portals (see www.stellenmarktmonitor.uzh.ch). The data set covers the period since 2001 for the whole of Switzerland and reaches back to 1950 for German-speaking Switzerland. The following analyses are based on a subsample of 14,000 job advertisements for skilled workers with basic VET from 2001 to 2011.

Based on the minimum requirements stated in the job ads, the job offers were classified according to three levels of education: the lowest level comprises jobs requiring no post-compulsory education, the medium level includes jobs requiring basic VET, while the highest level presupposes basic tertiary-level education.[5]

To identify the job openings suitable for new entrants to the workforce, we classified the ads according to requirements that jobseekers who recently completed basic VET can and cannot meet. According to our definition, suitable positions are those that do not require experience or further education beyond basic VET, do not involve managerial or supervisory functions, and do not explicitly exclude young workers because of age. Table 1 shows the distribution of advertised jobs in our sample by level of education and jobs for new entrants.

The aggregate number of published job advertisements with similar requirements is a very sensitive and highly valid indicator of companies' personnel needs – and hence conversely of the labour market situation for the group in question.[6] It is in every company's best interest to compose the ad in a way to target the group best suited for the job as effectively as possible (if for no other reason than that filtering out unsuitable candidates costs time and effort; see Mencken and Winfield 1998). Therefore, we can expect labour market entrants to have slim chances of successful application at best when a job ad includes one or more of the critical requirements that we used to identify entry-level jobs (this is also confirmed by an exploratory qualitative study by Müller 2011).

TABLE 1. Distribution of job openings, 2001-2011

		Level of education			
		low	VET	tertiary	
Jobs for new entrants	no	7.5%	44.9%	16.3%	68.7%
	yes	12.5%	15.1%	3.7%	31.3%
(n = 22,833)		20.0%	60.0%	20.0%	100.0%

[5] Tertiary-level vocational training and post-graduate study programs are considered forms of further education, which build on the foundations of basic vocational training or general education.

[6] For information concerning the external validation of the SJMM data, see Sacchi & Salvisberg (2011: 67ff) and Sacchi, et al. (2005: 130).

3. Unemployment among new labour market entrants

Figure 1 compares the development of the unemployment rate among career entrants with an apprenticeship by month to the respective rate for the total population from 1990 to 2010.[7] The following observations merit particular attention:

- *Labour market entrants have a higher vulnerability to unemployment in periods of economic downturn:* In accordance with our theoretical considerations, we observe a much sharper increase in unemployment among career entrants during periods of crisis.
- *Strong seasonal fluctuations:* Every September the large number of newly graduated apprentices entering the labour market at the same time upon completing final examinations boosts unemployment for a short period of time.
- *Long-term increasing difficulties in entering the labour market:* When we compare the average unemployment rate in the economic boom periods of 1990, 2001, and 2008, we notice an increasing gap to the detriment of newly graduated apprentices. While the unemployment rate among the latter was only about half the rate of the working population at large in 1990, it was already slightly higher than the average rate in 2001 and even more than twice the average rate in 2008. We can conclude that there has been a clearly disproportionate rise in hard-core unemployment among these fresh graduates.

> Figure 1 about here <

More comprehensive series of measurements across the whole range of vocational education programs, available only for the period since 2001, point in the same direction. For instance, the unemployment rate for career entrants with basic VET aged 15 to 24 was 1.3 times higher during the economic boom in 2001 than for skilled workers of 25 to 54 years of age. As the economy peaked in 2008, the rate reached the value of 1.6. Even for unemployment according to the ILO definition, the analysis of SAKE data confirms a long-term structural shift to the disadvantage of young compared to older workers with VET. For the entire period from 1995 to 2009, the unemployment rate of 18- to 25-year-olds with basic VET shows a clearly positive trend (Sacchi and Salvisberg 2011: 19ff).

[7] Unfortunately, the data does not allow an analysis for the entire population of VET graduates since 1990. Therefore Figure 1 refers only to career entrants with a dual apprenticeship. The unemployment figures are taken from AVAM. The population estimates for the entire gainfully employed population are based on the Swiss Labor Market Survey. Up until 1993, the unemployment figures involve some uncertainty (for details on the calculations, see Sacchi & Salvisberg 2011: 14f).

4. The significance of changes in labour demand at workforce entry

Based on our theoretical considerations outlined in section 1.1 to 1.5, we will now examine the possible explanations for the disproportionately growing unemployment among career entrants.

4.1 Growing occupational mismatch

A changing composition of demand for different occupations can lead to structural discrepancies between supply and demand in the labour market for workers with VET. We would expect such an *occupational mismatch* when significant numbers of youths become trained for occupations other than those demanded in the labour market.

We employ a dissimilarity index to capture the magnitude of skills mismatch in the labour market (formula 3 in Ragni 2004). This allows quantifying mismatch: The index indicates the percentage of unemployed jobseekers who would have to retrain for another occupation to offset current imbalances between supply of specific VET degrees and the respective demand as documented in the job ads.[8] The microdata on unemployed VET graduates required for this analysis is available only for the period since 2004, which is of course a rather short time span in terms of the structural shifts that we are attempting to capture here. Nonetheless, the series of measurements allows assessing the structural discrepancies for the year at the beginning and at the end of the period under consideration (i.e., 2004 and 2010), which were quite similar in terms of the overall labour market tension.

We observe an increasing occupational mismatch in the labour market for workers with VET since 2004, with the index growing from 12 to 26 points. The labour market for new entrants, however, shows no signs of a growing occupational skills gap. Quite to the contrary, the index declined from 25 to 14 points over the period, thus indicating that the occupational mismatch has become even smaller.[9] Even though we should exercise caution in interpreting these findings due to the short time span and the limited number of occupational categories considered, there is no evidence in support of a growing mismatch with respect to labour market entrants.

4.2 Increasing educational requirements

The labour market trend towards higher education may imply that demand for workers with tertiary-level qualifications has been rising at the expense of workers with basic VET. In this case, we would expect fewer vacancies for people with basic VET, whether they are career entrants or experienced workers.

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[8] The calculations are again based on AVAM unemployment figures. The 'labor market for all VET graduates' includes the entire working population aged 18-54 years with basic VET; the 'labor market for career entrants with VET' comprises all 18-21-year-olds with the same education. The vacancy figures are based on data provided by the Swiss Job Market Monitor (for details, see Sacchi and Salvisberg 2011: 48ff).

[9] While the annual estimates are not very precise in this case, the decline between 2004 and 2010 is statistically valid ($p<.05$).

Figure 2a displays the indexed development of advertised job openings for various categories of jobs. It clearly stands out that the volume of job openings strongly depends on the business cycle. Moreover, there is indeed a slight relative decline in the number of jobs requiring basic VET in the period under observation. However, once we differentiate between job openings for workers with VET suitable for new entrants and other job openings (according to the definition given in section 2), it becomes apparent that the decline is limited to jobs for career entrants. Hence, there is no evidence that there is less demand for basic VET, rather there exist fewer and fewer jobs for which basic VET *alone* is a sufficient qualification.

> Figure 2 about here <

4.3 Growing entry barriers for new labour market entrants

Increasing performance and efficiency demands in the workplace may result in employers attaching greater importance to workers being able to contribute quickly when hiring new staff. Work experience and further training can lower the costs of initial training for new employees and reduce uncertainty regarding job applicants' soft skills. These requirements therefore are likely to become more important as hiring criteria.

Figure 2b shows the proportion of job openings suited for career entrants in relation to all job ads aimed at workers with basic VET for the period 2001-2011. During this period, increasing job requirements resulted in a clear decline in the share of advertised jobs for workers with VET suitable for labour market entrants: from 36 percent in 2001 to 19 percent in 2011.[10]

The substantial decline in the share of jobs advertised suitable for career entrants is mainly due to the increasing number of job openings requiring experience and/or further education. Currently, no less than about 70 percent of all advertised jobs for workers with VET require work experience, and one third of those job openings require further training. 20% of the advertised jobs require leadership qualities and about 8 percent exclude new labour market entrants from applying based on age requirements. With the exception of age, all other requirements that effectively exclude career entrants from successful application have significantly gained in importance.[11]

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[10] The downward trend is highly significant ($p<.001$). This account of the share of entry-level jobs focuses on long-term shifts between such jobs and other openings while it does not consider the strong fluctuations in absolute numbers owing to the business cycle (see Figure 2a).

[11] The decline in entry-level jobs may also be a consequence of, as one reviewer suspects, companies "(...) increasingly resort(ing) to the external market when hiring into 'mid-career' positions (...)" The increasing share of jobs that require leadership abilities points in this direction but explains only a small part of the observed decline in entry-level jobs. Besides, it also fails to explain why there has been a sharp long-term drop in the *absolute number* of entry-level jobs (see Figure 2a).

Notably, the decline of jobs suitable for labour market entrants was particularly strong during the economic downturn from 2003-2006. The rapidly mounting barriers to labour market entry for newcomers observed during the years of recession and the subsequent stabilization of this trend at a higher level is a pattern typical of previous periods of economic downturn as well (Sacchi and Salvisberg 2011: 38). Thus, while companies seem to sharpen their selection criteria in times of excess labour supply, they are not relaxed again in periods of growing labour demand. Against the backdrop of this long-term pattern, the job market for new entrants remained surprisingly robust during the most recent economic downturn in 2009. This may be due to a much less drastic and prolonged decline in labour demand compared to previous recessions in Switzerland (see the development of the overall index of job ads in Figure 2a).

The proposed explanations for the growing importance of work experience and further training in selecting new staff focus on changes *within* companies at the level of individual jobs. However, as proposed in section 1.5, the aggregate long-term trend might also be a mere concomitant of structural changes in the economy that cause the rise and decline of different job categories. In this case, we would expect job losses primarily in those sectors, companies, and areas of business that traditionally have a high proportion of jobs suitable for new entrants while at the same time those job categories would gain importance that have always had high demands for, among other things, work experience and further training.

In the following, we will therefore take a closer look at the extent to which structural economic change accounts for the long-term decline in the proportion of jobs suitable for career entrants in relation to all jobs requiring VET, as illustrated in Figure 2b. For this purpose, we use logistic regression to model the change in the *share of entry-level jobs* for the period 2001-2011. The model allows assessing the long-term trend of job openings for career entrants irrespective of the economic fluctuations that affect the *absolute* number of job offers in general. The dependent variable takes the value (1) in the case of jobs suited for new entrants with VET (according to our definition in section 2) versus (0) in the case of all other jobs for workers with VET. *Model I* considers a quadratic temporal trend, which provides a sufficient approximation of the non-linear decline for the period under consideration, as follows from Figure 2b.[12] *Model II* incorporates additional indicators for the composition of the pool of available jobs by company and job characteristics.[13] Comparing the two models allows assessing to what extent the long-term trend in the share of entry-level jobs can be attributed to structural changes in the composition of job openings.

[12] Estimation of a cubic function does not significantly improve the model.

[13] The additional indicators included in Model II are based on the information included in the job advertisements. In order to control for changes in the data base caused by the integration of new advertisement media in 2006, we have added a control variable accordingly. Interactions between the control variable and the time trend are neither substantial nor significant.

As expected, Model II in Table 2 show substantial differences in the share of jobs for new labour market entrants in various occupations and sectors, large and small enterprises, and companies in the private and the public sector. The same holds true for various types of jobs. The long-term decline in the share of jobs for new entrants, however, can *clearly not* be attributed to the changing structural composition of the jobs advertised: Even if we comprehensively take into account both the composition of the underlying population of companies advertising jobs and the composition of the pool of jobs posted, we still observe the same long-term decline as indicated by the nearly identical regression coefficients for the two trend variables in Model I and Model II. Accordingly, the coefficients pertaining to the time trend do not differ significantly between the two models.[14] Adding interaction terms between time and structural variables to Model II does not affect this result either.[15] The observed long-term decline thus holds across all sectors and all kinds of job openings for the entire economy and is not merely a concomitant of structural economic change. This finding indirectly supports the explanations in section 1.3 and 1.4, which focus on the *processes within companies*.

TABLE 2. Job market structure and the availability of jobs for new labour market entrants (2001-2011)

Logistic regressions [1)]	Model I (trend only)			Model II (trend & structure)		
(n = 14,133)	B	(SE)	Sig.	B	(SE)	Sig.
Trend (based on survey year)						
Linear term	-0.083	(0.015)	***	-0.086	(0.014)	***
Quadratic term	0.009	(0.004)	*	0.009	(0.004)	*
Occupational groups [ref. = mean]						
Occupations in finance, human resources management, and marketing	/			-1.261	(0.131)	***
Technical occupations	/			-0.708	(0.101)	***
Commercial occupations	/			-0.500	(0.094)	***
Occupations in teaching, health, and culture	/			-0.230	(0.133)	+
Occupations in retail and transportation	/			-0.220	(0.111)	*
Occupations in the hotel and restaurant ind. + the field of personal hygiene	/			-0.073	(0.176)	
Other occupations	/			0.654	(0.245)	**
Other industrial occupations	/			0.689	/	
Occupations in construction	/			0.718	(0.120)	***
Occupations in the metal, mechanical, and electrical industry	/			0.931	(0.110)	***
Type of employment [ref. = permanent, full-time]						
Part-time (50-90%)	/			0.307	(0.133)	*
Temporary employment	/			0.681	(0.139)	***
Secondary employment (less than 50%)	/			0.739	(0.252)	**
Internships	/			3.004	(0.374)	***

[14] A design-adjusted Wald test was performed using 'seemingly unrelated estimation' (F [1,560] = 0.22; P = .64) to test the hypothesis of identical pairs of Bs.

[15] We find a weakly validated interaction effect at a 10% level for only one group of occupations, namely for the metal, mechanical, and electrical industry; in this case, the decline in entry-level job openings is somewhat larger over time.

Sector [ref. = mean]						
Other industries and trades	/			-0.366	(0.106)	**
Business services	/			-0.356	(0.101)	***
Chemicals, metal, mechanical, electrical, clock and watch industry	/			-0.269	(0.100)	**
Commerce, transportation, communications	/			-0.027	/	
Social services	/			0.262	(0.110)	*
Unknown, private households	/			0.282	(0.137)	*
Personal services	/			0.475	(0.171)	**
Public sector [ref. = private sector]	/			-0.574	(0.150)	***
Company size [ref. = medium enterprises]						
Large enterprises	/			-0.492	(0.092)	***
Small enterprises	/			0.324	(0.176)	+
Expansion of the sample in 2006	-0.798	0.104	***	-0.684	(0.097)	***
Constants	-0.851	0.083	***	-0.615	(0.092)	***

1) Regression coefficients (B), robust standard errors (SE), level of significance (sig.). Legend sig.: *** P ≤ .001; ** P ≤ .01; * P ≤ .05; + P ≤ .10. SE takes the complex sample design into account (sample weights, clustering of job ads within advertising media, stratification, finite population correction for PSU).

5. Summary and conclusions

Our research focus is on the long-term changes in the demand-side conditions for labour market entry for VET graduates in Switzerland. Although the Swiss dual VET system has fared quite well in enabling a fairly smooth transition from education to the labour market, we are witnessing a persistent trend across business cycles of increasing unemployment among new entrants to the workforce compared to experienced workers. We considered various explanations for the growing difficulties in making the initial transition to the labour market. In our analyses, we found no evidence for a growing occupational mismatch in the job market for new entrants nor for a general shift in qualification requirements to the disadvantage of vocational qualifications. There is little in the respective findings that questions the role of the dual VET system as the established institutional form of qualifying skilled labour. Our analyses of the job market, however, suggest that successfully completing a VET program *alone* no longer guarantees employment in today's labour market. Companies have increasing *requirements, especially in terms of work experience and further training*, that fresh VET graduates cannot meet. As a result of this development, the share of advertised jobs suitable for new entrants has been cut nearly in half from 2001 to 2011. Taken together, our findings suggest that the increasing significance of job requirements that result in excluding labour market entrants provides the most convincing explanation for the disproportionate rise in structural unemployment among labour market entrants with VET in Switzerland. Based on our theoretical considerations, there are two developments that could underlie the sharp increase in companies' requirements especially with respect to work experience: On the one hand, we argue that while tasks are becoming more demanding and require more extensive initial training, the capacity available to train new employees is declining as a result

of companies' attempts to achieve greater personnel flexibility and meet growing market pressures. On the other hand, there is sizable evidence suggesting that, due to changes in the organization of work, there has been a significant rise in companies' job requirements in regard to soft skills. To the extent that recruiters take work experience as an indirect signal for specific soft skills (e.g. negotiating skills) acquired in previous jobs, they may favour experienced workers over fresh VET graduates and advertise jobs accordingly. Studies directly concerned with personnel recruitment at the company level would be highly desirable to more precisely assess the plausibility and the relative weight of the various explanations. Yet even though there obviously remains a need for more research, the longitudinal analysis of job ads has provided some strong cues for a substantial long-term rise in company demands for work experience and further training across business cycles. This suggests that there are growing hurdles that have to be overcome in the transition from VET to the labour market. However, career entrants with VET who do manage to overcome them are still very much in demand once they have collected some years of work experience. According to our analysis, growing unemployment among VET graduates entering the labour market is thus a consequence of increasing difficulties in finding the first job and not the result of a generally shrinking demand for skilled workers without tertiary education.

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Figures

Figure 1. Unemployment among recently graduated apprentices; monthly series for 1990-2010[16]

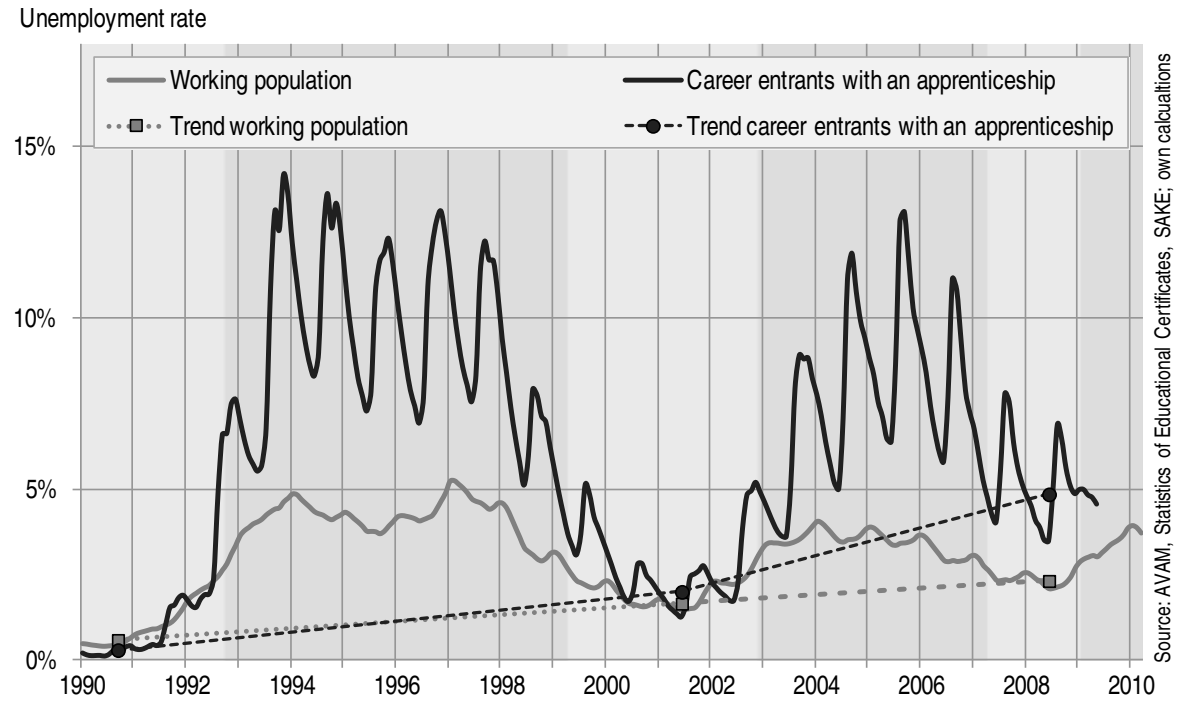
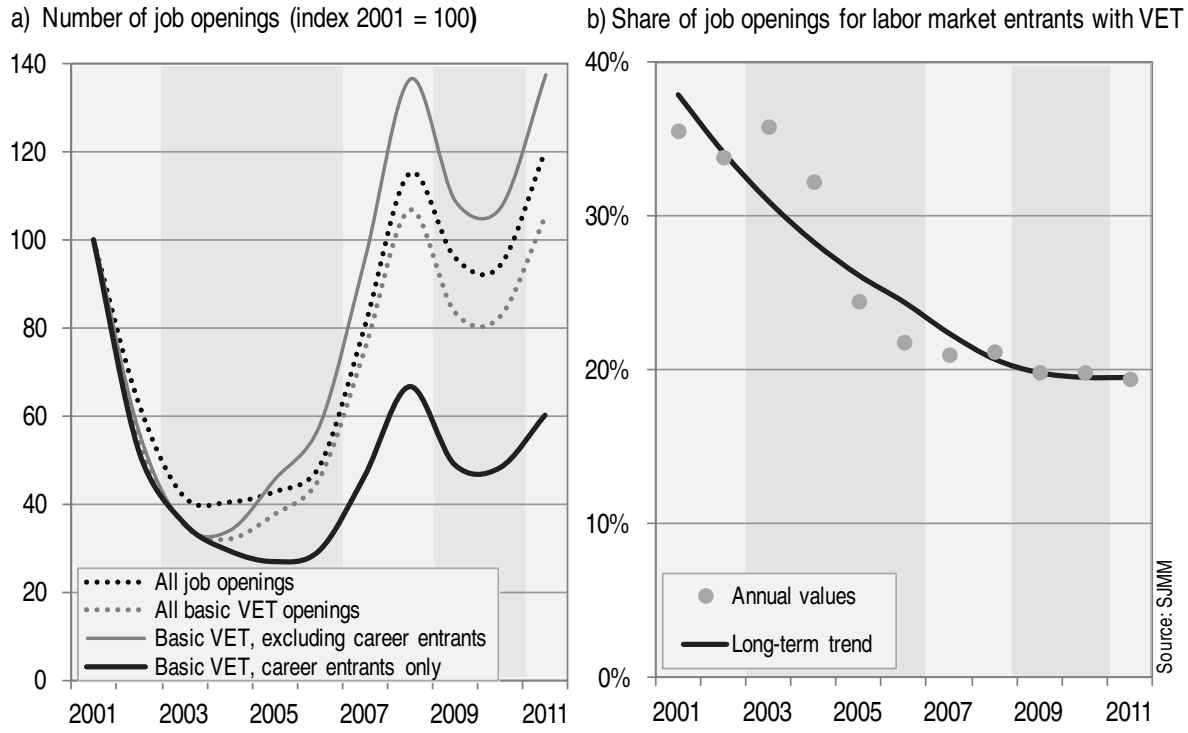


Figure 2. Development of advertised job openings, 2001-2011



[16] In the figures, periods of above average total unemployment are indicated by a darker and below average unemployment by a lighter shade.